Superfund researchers well represented at combustion research meeting

By Sara Mishamandani

Leaders in the field of combustion research, from academia, government, and industry, gathered in New Orleans May 15-18 for the 13th International Congress on Combustion By-Products and Their Health Effects. *(http://www.lsu.edu/piccongress/index.htm)* NIEHS and NTP Director Linda Birnbaum, Ph.D., who gave the keynote address at the meeting, was on hand as NIEHS-funded Superfund Research Program (SRP) grantees presented important findings related to the Gulf oil spill, and two SRP researchers received awards of excellence.

During a break in the meeting, Birnbaum, left, spoke with Brian Gullett, Ph.D., an environmental engineer in the U.S. Environmental Protection Agency Office of Research and Development. (Photo courtesy of Maud Walsh)

Louisiana State University (LSU) SRP Center Director Barry Dellinger, Ph.D., and lead researcher Stephania Cormier, Ph.D., organized the meeting.

New developments in combustion research

Dellinger co-led a session on emissions, remediation, combustion, and toxicity related to the Deepwater Horizon oil spill. During Dellinger's session, LSU SRP researcher Slawo Lomnicki, Ph.D., reported *(http://www.ncbi.nlm.nih.gov/pubmed/?term=Tar+Balls+from+Deep+Water+Horizon+Oil+Spill%3A+Environmentally+Persistent+Free+Radicals+%28EPFR%29+Formation+During+Crude+Weathering)* that environmentally persistent free radicals (EPFRs) were found in tar balls collected from Gulf of Mexico shores after the oil spill. LSU SRP research focuses on EPFRs, *(http://www.srp.lsu.edu/files/item24088.pdf)* which are newly identified pollutant particles that form in combustion, such as the burning of fossil fuels.

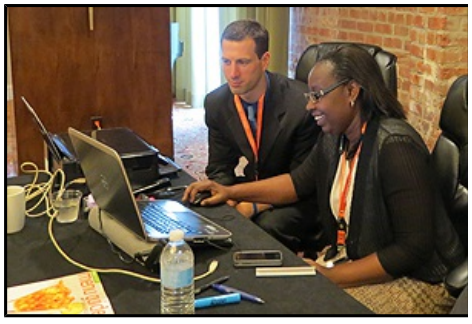
Adel Sarofim Award winners Koshland, left, and Lucas (Photo courtesy of Maud Walsh)

Emissions from combustion continue to be a controversial environmental issue. The risks associated with the widespread use of combustibles have increased awareness of dioxins and other organic pollutants, nitrogen oxides, sulfur oxides, complex mixtures, metals, and fine particulate matter. While the main focus of the conference was on the origins, fate, and health effects of combustion emissions, it also included all forms of thermal treatment of hazardous substances at Superfund sites.

SRP scientists awarded for their achievements

During the meeting, University of California (UC), Berkeley SRP project leaders Catherine Koshland, Ph.D., and Donald Lucas, Ph.D., received the Adel Sarofim Award for Excellence in Combustion Research.

Koshland has made noteworthy contributions to understanding the role of air pollution from an environmental health systems perspective. Lucas has significantly advanced understanding of combustion-generated air pollutants through the use of experimental chemical kinetics, novel diagnostic techniques for hazardous species, and combustion chemistry. Together, Koshland and Lucas have published 48 manuscripts as co-authors and mentored approximately 90 graduate students, postdoctoral students, and visiting researchers.

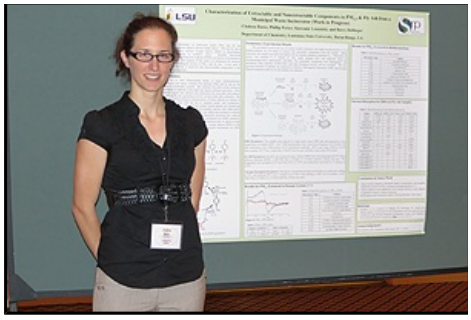


SRP trainees were an important part of the meeting. Oregon State University SRP trainee Andy Larkin, Ph.D., left, and LSU SRP trainee Lucy Kiruri both gave oral presentations. (Photo courtesy of Maud Walsh)

The award was established in 2007 to honor Adel Sarofim, Sc.D., an internationally renowned chemical engineering researcher, for advancing understanding of the mechanisms of pollutant emissions from combustors. The award is given by the executive committee of the international congress for outstanding contributions to the understanding of pollutant formation and emissions from combustion processes, and for extraordinary effort towards mentoring of candidates in the research field of combustion and health effects. Former winners include Dellinger, in 2009, and NIEHS SRP Director Bill Suk, Ph.D., in 2011.

Founded in 1990, the international congress meets biennially. This meeting's six plenary sessions covered health effects of emissions, environmental fate of pollutants from combustion sources, environmental sampling technologies, and mechanisms of toxicology of pollutants from combustion sources. Several SRP investigators and trainees presented during oral sessions and a poster session.

(Sara Mishamandani is a research and communication specialist for MDB Inc., a contractor for the NIEHS Superfund Research Program and Division of Extramural Research and Training.)



LSU SRP trainee Cholena Russo presented her research at the poster session on chemical components in fine particulate matter and fly ash from a municipal waste incinerator. (Photo courtesy of Maud Walsh)

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